



PROJECT AIR FORCE

THE ARTS
CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND
HOMELAND SECURITY
TRANSPORTATION AND
INFRASTRUCTURE
WORKFORCE AND WORKPLACE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

[Jump down to document](#) ▼

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

[Purchase this document](#)

[Browse Books & Publications](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore [RAND Project AIR FORCE](#)

View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Unauthorized posting of RAND PDFs to a non-RAND Web site is prohibited. RAND PDFs are protected under copyright law. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please see [RAND Permissions](#).

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2010		2. REPORT TYPE		3. DATES COVERED 00-00-2010 to 00-00-2010	
4. TITLE AND SUBTITLE Cultural Themes in Messages from Top Air Force Leaders, 2005-2008				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Rand Corporation, 1776 Main Street, PO Box 2138, Santa Monica, CA, 90407-2138				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 64	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

This product is part of the RAND Corporation documented briefing series. RAND documented briefings are based on research briefed to a client, sponsor, or targeted audience and provide additional information on a specific topic. Although documented briefings have been peer reviewed, they are not expected to be comprehensive and may present preliminary findings.

DOCUMENTED BRIEFING

Cultural Themes in Messages from Top Air Force Leaders, 2005–2008

Carolyn Chu • Brandon Dues • Laura L. Miller

Prepared for the United States Air Force

Approved for public release; distribution unlimited



The research described in this report was sponsored by the United States Air Force under Contract FA7014-06-C-0001. Further information may be obtained from the Strategic Planning Division, Directorate of Plans, Hq USAF.

Library of Congress Cataloging-in-Publication Data

Chu, Carolyn

Cultural themes in messages from top Air Force leaders, 2005-2008 / Carolyn Chu, Brandon Dues,
Laura L. Miller.

p. cm.

Includes bibliographical references.

ISBN 978-0-8330-4790-8 (pbk. : alk. paper)

1. United States. Air Force--Language. 2. Military socialization--United States. 3. Leadership. 4. Organizational behavior--United States. 5. Rhetoric--Political aspects--United States. I. Dues, Brandon. II. Miller, Laura L., 1967- III. Title.

UG633.C85 2010

358.4'16884--dc22

2010011333

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

Cover image courtesy of Air Force/Staff Sgt. Suzanne M. Day.

© Copyright 2010 RAND Corporation

Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Copies may not be duplicated for commercial purposes. Unauthorized posting of RAND documents to a non-RAND Web site is prohibited. RAND documents are protected under copyright law. For information on reprint and linking permissions, please visit the RAND permissions page (<http://www.rand.org/publications/permissions.html>).

Published 2010 by the RAND Corporation

1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138

1200 South Hayes Street, Arlington, VA 22202-5050

4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665

RAND URL: <http://www.rand.org>

To order RAND documents or to obtain additional information, contact

Distribution Services: Telephone: (310) 451-7002;

Fax: (310) 451-6915; Email: order@rand.org

Preface

This documented briefing conveys the results of a content analysis of messages from the Secretary of the Air Force (SECAF), Chief of Staff of the Air Force (CSAF), and Chief Master Sergeant of the Air Force (CMSAF) addressed to all U.S. Air Force (USAF) personnel from September 2005 through March 2008. The analysis examines the degree to which the messages' themes and emphases reinforce cultural goals of Air Force leadership. Insights gained from the analysis are intended to provide Air Force leadership guidance to promote the adoption of common concepts and identities among Airmen and to ensure that Air Force personnel at large understand the USAF leadership's vision and concerns.

This effort is part of a multiyear research project in RAND Project AIR FORCE (PAF) sponsored by the Air Force Deputy Chief of Staff for Manpower and Personnel. The goal of the overarching project is to provide Air Force leadership with a better understanding of Air Force culture and effective ways it can shape that culture to meet the leaders' standards.

RAND Project AIR FORCE

RAND Project AIR FORCE (PAF), a division of the RAND Corporation, is the U.S. Air Force's federally funded research and development center for studies and analyses. PAF provides the Air Force with independent analyses of policy alternatives affecting the development, employment, combat readiness, and support of current and future aerospace forces. Research is conducted in four programs: Force Modernization and Employment; Manpower, Personnel, and Training; Resource Management; and Strategy and Doctrine.

Additional information about PAF is available on our Web site:

<http://www.rand.org/paf/>

Contents

Preface	iii
Table	vii
Summary	ix
Acknowledgments	xiii
Abbreviations	xv
 CHAPTER ONE	
Introduction	1
 CHAPTER TWO	
Characteristics of the Messages	5
 CHAPTER THREE	
Methods	11
 CHAPTER FOUR	
Results	15
Goal 1: Define the Organization	16
Goal 2: Promote the Core Values and the Corresponding Behaviors	20
Goal 3: Promote Shared Identity Across the Air Force Regardless of Air Force Specialty Code, Major Command, Rank, or Component	22
Goal 4: Ensure That Everyone in the Air Force Is Valued and Recognized and Feels a Sense of Belonging	24
Goal 5: Promote the Well-Being and Readiness of Individual Airmen	26
 CHAPTER FIVE	
Recommendations and Conclusions	29
 APPENDIXES	
A. Codebook	37
B. Interrater Reliability Statistics	43
 Bibliography	 45

Table

1. Timing of Message Publication 8

Summary

An organization's senior leadership can create, embed, and transmit an organization's culture. What leaders consistently pay attention to, reward, control, and react to emotionally provides an overarching cultural framework and can signal leaders' priorities for the organization.¹ Inconsistent or nonsalient goals from leaders can cause confusion among subordinates and foster the emergence of an abundant set of subcultures within an organization, some of which may undermine organizational priorities. To help the Air Force ensure that the emphasis and content of messages its top senior leaders aim at its personnel reinforce stated cultural goals, RAND researchers conducted this analysis of cultural themes within these communications.

The cultural goals of the Air Force leadership included

1. define the organization's purpose and identity for its members
2. promote the Air Force's core values
3. create a shared identity across the Air Force
4. reinforce a sense of value, recognition, and belonging among all Air Force personnel
5. care for the well-being of Airmen.

Air Force publications, such as former Secretary of the Air Force Michael Wynne's Air Force Goal Card, expressed these in various forms. RAND assessed the level of consistency of senior leadership messages with these goals, using the set of messages addressed to Air Force personnel by Gen T. Michael Moseley (CSAF, September 2005–August 2008), the Honorable Michael W. Wynne (SECAF, November 2005–June 2008), and CMSgt Rodney J. McKinley (CMSAF, June 2006–present). We used a standard content analysis methodology to analyze the following messages dating from September 2005 to March 2008: "Letter to Airmen" (either from the SECAF or jointly from the SECAF and CSAF), "CSAF's Scope," "CSAF's Vector," or "The Enlisted Perspective" (from CMSAF).

This analysis was not an exhaustive review of all Air Force communications. Rather, the analysis focused on messages aimed at Air Force personnel and from the three top leaders in the Air Force because these three leaders are the principal role models within the organization. These messages are, of course, not the only means these leaders have to shape organizational culture; other means include rituals, symbols, socialization at entry, rules and regulations, and rewards and punishments.

The mode and frequency of distribution of messages differed for each senior leader, but all the messages were made available to USAF personnel on the official Air Force Web site, *Air Force Link* (see pp. 6–9). The CSAF sent messages directly by email to all USAF personnel,

¹ Edgar Schein, *Organizational Culture and Leadership*, 3rd ed., San Francisco: John Wiley & Sons, Inc., 2004, p. 254.

while messages from the SECAF alone, the joint SECAF/CSAF messages, and the CMSAF messages were emailed to USAF commanders with the intention that they would be forwarded to or discussed with unit members at each commander's discretion. The SECAF released messages nearly every month, but messages from the other two leaders were somewhat sporadic.

Themes coded in the analysis were developed from leadership priorities identified in the larger Air Force culture study and from the content of the messages themselves. This analysis used the following codes:

- Air Force History and Heritage
- Air Force Mission Today
- Air Force Path to the Future
- Core Values
- Behaviors Exhibiting Core Values
- Violations of Core Values/Rules
- Airman
- Warrior/Warfighter/Warrior Ethos
- Wingman Concept/Behaviors
- Recognizing the Role of Subgroups
- Individual Well-Being and Readiness
- Families (see pp. 14–15).

Appendix A describes these codes in detail.

Our analysis of the substantive themes in these messages revealed that the senior leadership was successful in clearly defining the Air Force's purpose. The messages drew from historical Air Force examples to define the organization's identity and, in particular, identified heroes who were pilots in World War II or Vietnam (see pp. 16–17). Over 80 percent of each author's messages discussed the Air Force current mission, and at least half mentioned the senior leaders' vision for the future direction of the Air Force (see pp. 18–19).

The Air Force senior leaders regularly emphasized the Air Force core values throughout their messages (see pp. 20–21). Two of the three values, Integrity First and Excellence in All We Do, were commonly mentioned, clearly defined, and illustrated through concrete examples of behaviors demonstrating such values. While Service Before Self was commonly mentioned, it was not defined beyond the general concept of personal "sacrifice," and rarely were examples provided to convey the senior leaders' understanding of what this value means.

In 1989, Carl Builder noted that Air Force military personnel lacked a shared, overarching organizational identity. Members tended to identify themselves primarily with their weapon system (e.g., as an F-15 pilot) rather than as a member of the organization as a whole. In the senior leader communications we analyzed, consistent promotion of the common identity *Airmen* was evident (see pp. 22–23). One ambiguity in the term's definition was detected: At times, the term included civilians; at others, civilians were treated as a separate group. Other potentially unifying terms, such as *warrior*, *wingman*, and *warfighter*, were also used, although less frequently than *Airman* (see p. 22). The concept of a *wingman*, which aims to encourage members to monitor and support the well-being of one another, was discussed through exam-

ples of such behavior, but we found no mention of the recently implemented, Air Force–wide “Wingman Day.”²

The roles of different career fields were unequally emphasized through historical examples, where pilots were habitually cited but other occupations were not (see p. 24). The value of the current contributions of various Air Force subgroups, however, was recognized through concrete examples of the roles of different components, minorities, and career fields within the Air Force. The senior leadership frequently praised all Airmen, thanking everyone for contributing a unique and integral part of the Air Force (see p. 25).

Top senior leaders took unique approaches to emphasizing the importance of caring for Airmen’s well-being and readiness (see pp. 26–27). The SECAF focused on enhancing individual well-being opportunities (counseling, education, financial guidance, etc.). The CSAF concentrated on ensuring safety for Airmen through operational readiness. The CMSAF focused on the link between compliance with rules and regulations and Airmen readiness. Although the senior leadership touched on different aspects of caring for the individual Airmen, caring for Airmen’s families was not similarly emphasized (see p. 28).

To promote the senior leadership’s ability to endorse more fully the range of cultural goals they identified, we offer several recommendations for future messages:

- Promote examples of recent heroism (1990–present) (see pp. 29–30).
- Identify the historical roles of predecessors of growing aspects of the Air Force mission, such as space and cyberspace (see pp. 29–30).
- Explicitly link today’s mission to past Air Force missions to demonstrate continuity with Air Force heritage (see pp. 29–30).
- Elaborate on the meaning of the Air Force core value Service Before Self through examples, as has been done for Integrity First and Excellence in All We Do (see p. 31).
- Agree on and clarify whether the term *Airmen* includes civilians (see p. 32).
- Emphasize Wingman Day and the concept of being a wingman by releasing a message from the CSAF on the goals and importance of Wingman Day (see pp. 32).
- Devote a message to family well-being and recognition of the sacrifices of families (see p. 34).
- Distribute all messages at consistent intervals and through multiple sources directly to all Air Force personnel (see pp. 35).

² The Air Force first celebrated Wingman Day in 2004.

Acknowledgments

Gwen DeFilippi and Leslie Roberson at the Air Force's Airman Development Division served as the action officers for the broader RAND research project on Air Force culture under which this effort was conducted. They, along with Joseph McDade, Director, Airman Development and Sustainment, provided guidance on the relevant issues to explore in this content analysis and relevance of the findings for the Air Force leadership. At RAND, Brian Grady provided administrative assistance, and Gail Fisher provided guidance on content analysis methods. Michael Neumann and Carol Earnest helped improve the graphic representation of the data on some of the slides. David Kennedy and Peter Mendel provided valuable feedback on an earlier draft of this manuscript.

Abbreviations

AFSO 21	Air Force Smart Operations for the 21st Century
CMSAF	Chief Master Sergeant of the Air Force
CSAF	Chief of Staff of the Air Force
DoD	Department of Defense
ICAG	Internal Communications Assessment Group
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
PAF	RAND Project Air Force
SECAF	Secretary of the Air Force
USAF	U.S. Air Force
WWII	World War II

Introduction

Objective

Assist the Air Force in ensuring that the emphasis and content of messages from senior Air Force leaders reinforce their stated goals regarding culture

RAND DB583-1

RAND has been engaged in a multiyear effort to assist the Air Force in understanding and shaping its culture. As a single component of that larger project, we examined written messages from the Chief of Staff of the Air Force (CSAF), the Secretary of the Air Force (SECAF), and the Chief Master Sergeant of the Air Force (CMSAF) addressed to Air Force personnel to assess the messages' alignment with the cultural goals of the senior leaders.

Senior Leaders Embed and Transmit Culture

In summary, what leaders consistently pay attention to, reward, control, and react to emotionally communicates most clearly what their own priorities, goals and assumptions are. If they pay attention to too many things or if their pattern of attention is inconsistent, subordinates will use other signals or their own experience to decide what is really important, leading to a much more diverse set of assumptions and many more subcultures.

—Edgar H. Schein

RAND DB583-2

Many Air Force personnel will never directly interact with senior Air Force leaders but may judge these leaders' values and priorities according to what they glean from media coverage, leader-generated policies, personnel or budget changes, or the leaders' own speeches or written communications. As Edgar Schein, a scholar in the field of organizational development and a professor at MIT's Sloan School of Management, asserts, leaders of an organization can help cultivate an overarching culture for their subordinates.¹ Although organizations can have multiple identities for multiple purposes, an overarching culture can provide a framework for the subcultures of the organization, balancing identification with specific subcultures and the larger organization.² The senior leaders at the pinnacle of the organization can influence the perceptions, values, and behaviors of the most distant, lowest-ranking members. Indeed, one of the major responsibilities of senior leaders is to shape an organization's culture and manage its various identities.³

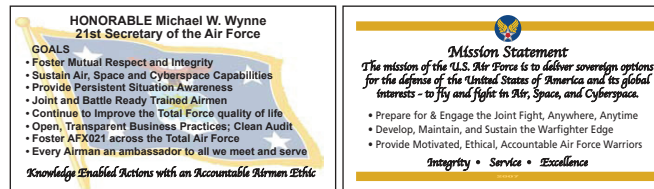
¹ Edgar H. Schein, *Organizational Culture and Leadership*, 3rd ed., San Francisco: John Wiley & Sons, Inc., 2004, p. 254.

² Stuart Albert and David Whetten, "Organizational Identity," in *Research in Organizational Behavior*, Vol. 7, Greenwich, Conn.: JAI Press, 1985, p. 292.

³ Dennis A. Gioia, Majken Schultz, and Kevin G. Corley, "Organizational Identity, Image, and Adaptive Instability," *The Academy of Management Review*, Vol. 25, No. 1, January 2000.

Air Force Senior Leader Goals Regarding Culture

- Our understanding from the Air Force Culture project
 - Define the organization
 - Promote core Air Force values
 - Create a shared identity across individuals
 - Foster a forcewide sense of value, recognition, and belonging
 - Care for Airmen
- SECAF Goal Card



RAND DB583-3

As one result of our meetings with Air Force headquarters staff for the larger RAND research project on Air Force culture, we identified five key cultural themes that the Air Force leadership has prioritized at least since 2005, when our work on Air Force culture began. One leadership goal was to define the organization, its purpose, its identity and to connect the past with the present and future. That goal includes identifying what types of individuals constitute the Air Force, outlining the mission of the Air Force and how that mission will grow and change in the future, and demonstrating how the missions of the past are connected to today's and future missions. A second goal was to promote the Air Force's core values across the force to create common standards and expectations for appropriate behavior. A third goal was to foster a shared identity across individuals within the force, one that would be more encompassing than the identities they attached to, for example, their ranks, weapon systems, or career fields. The fourth goal was related to the third: the senior U.S. Air Force (USAF) leadership sought to create a forcewide sense of belonging and value and recognition for the contributions of everyone in this large and diverse organization. Finally, as a fifth goal, Air Force leaders emphasized care of Airmen, both in terms of ensuring that all are operationally ready and in terms of looking out for the well-being of all members as individuals.

Characteristics of the Messages

Parameters of the Message Sample

- Sources: Official messages from the top Air Force leadership
- Audience: Messages aimed at current Air Force members and employees (as opposed to speeches to audiences outside the Air Force)
- Periods: The tenures of
 - The Honorable Michael Wynne, SECAF (November 2005–June 2008)
 - Gen T. Michael Moseley, CSAF (September 2005–June 2008)
 - CMSgt Rodney J. McKinley, CMSAF (June 2006–present)
- No messages dated after March 2008 were analyzed

RAND DB583-4

Senior Air Force leaders have multiple channels, both internally and externally, for delivering messages to Air Force personnel. We collected many different types of communications from top leaders and their offices, such as senior leaders' speeches to audiences outside of the Air Force, "Airman's Roll Call," and *Airman's Quarterly* magazine. Note that these publications can communicate themes that senior leaders wish to emphasize but do not necessarily name these leaders as the authors. For this analysis, we chose to focus on messages delivered during the period in which the broader study on Air Force culture was being conducted that were explicitly signed by the CSAF, SECAF, and CMSAF and aimed directly at Air Force personnel. Thus, this study was not an exhaustive review of Air Force communications. Formal messages are but one way leaders can shape an organization's culture. Organizations have many other important formal and informal means of communicating values, including setting rules and policies to guide behavior and giving rewards for behaviors that reflect the desired cultural values. This study focused on one of the many tools available to senior leaders: written messages.

We located these messages on *Air Force Link*, via the “Senior Leader Viewpoints” Web page.¹ Messages explicitly from the senior leaders were posted on the site via pages (the equivalent of news columns) titled “Letter to Airmen” (from the SECAF or jointly from the CSAF and the SECAF), “Scope” (from the CSAF), “Vector” (from the CSAF), and “The Enlisted Perspective” (from the CMSAF). We limited the scope of this study to messages dating from the beginning of each leader’s tenure through March 2008, the month the final analysis of the data began.

¹ Following USAF leadership changes in 2008, the senior leaders’ messages we used for this analysis are no longer publicly available on the Web.

How Messages Are Disseminated

- All messages were available to all USAF personnel via *Air Force Link*
- CSAF's "Scope" and "Vector" messages were emailed directly to all USAF personnel with DoD email addresses
- SECAF and joint SECAF-CSAF "Letters to Airmen" were emailed to USAF commanders to be passed on at their discretion
- CMSAF's "The Enlisted Perspective" is accessible through *Air Force Link*
- None of the sources appear to be distributed using the new "all Airmen" email alias

RAND DB583-5

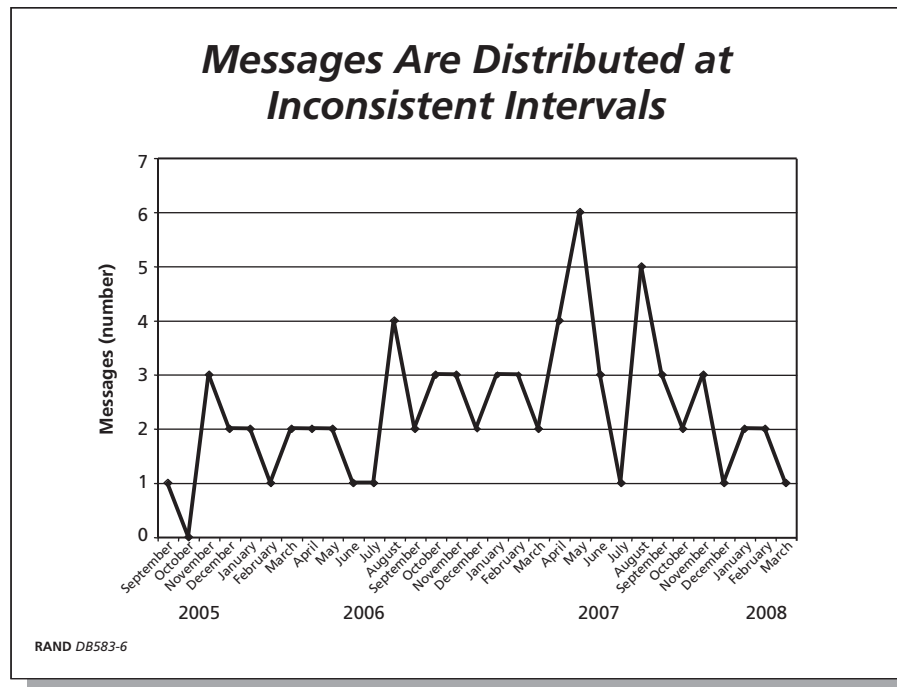
The senior leaders' messages were publicly available on *Air Force Link* to anyone with Internet access, but the level of outreach to individual Air Force personnel via email varied by leader.¹ The SECAF and joint SECAF/CSAF messages were emailed only to military commanders, with the intent that they would share the content at their own discretion. The CSAF sent his messages directly to all USAF personnel with a DoD email address. The CMSAF sent his messages via email to key USAF leaders for further discretionary dissemination.

Improvements to the Air Force's email address assignment system have made emailing messages a more-reliable means of reaching individual Airmen than before. Prior to March 3, 2007, Air Force personnel's email addresses changed with each permanent change of station (the email address format depended on the physical location), so email addresses on file were not always up to date. In March 2007, the Air Force's "E-Mail for Life" program provided a universal format for USAF email addresses, giving each Airman one that would remain constant throughout his or her career. The result was a more consistently accurate database of USAF email addresses.²

The degree of dissemination of the senior leader messages described here among Air Force personnel cannot be accurately determined. All the messages were available on *Air Force Link*. To guarantee access to each senior leader message, Air Force personnel would have to take the initiative to visit *Air Force Link* routinely. Leaders could potentially attempt to gauge what percentage of the intended population at least glanced at the messages through an automated count of "hits" on the Web pages. But that approach has its own problems. Multiple views by single users and the inability to distinguish whether viewers are Air Force personnel or not prevent the Air Force from determining the degree to which the USAF population is reading the messages through *Air Force Link*.

¹ We learned about the distribution practices through an email query via *Air Force Link*.

² Karen Petitt, "Air Force Launches 'E-Mail for Life' Initiative," *Air Force Link*, March 3, 2007.



Overall, Air Force personnel could expect at least one senior leader message publication per month to appear on *Air Force Link*. In 30 of the 31 months analyzed (September 2005 to March 2008), at least one message appeared; in over 80 percent of the 31 months, at least two messages appeared. The number and intervals between messages varied by senior leader. Table 1 illustrates the distribution of the release of the publications.

Of the 70 total messages, the SECAF's 26 messages were published consistently: on average, every 34 days, or roughly every month. The SECAF never circulated more than one message a month, routinely published at the beginning of the month, and distributed over 70 percent (19 of 26) of his messages within the first 10 days of the month. His other seven messages never appeared later than the 15th of each month. Hence, Air Force personnel who wanted to keep abreast of the SECAF's messages could check the site at the middle of each month and expect to find a new message from him.

Table 1
Timing of Message Publication

Author	Interval Between Issues (days)	Period Within Month ^a
SECAF	34.32 ±4.108	Beginning
CSAF	41.6 ±16.82	Sporadic
CMSAF	39.21 ±13.62	Beginning
SECAF/CSAF	56.43 ±20.20	Sporadic

^a We divided a month into three broad periods: beginning (days 1–10), middle (days 11–20), and end (days 21–30). This measure assumes an average month of 30 days.

The CSAF's messages were more sporadic: The timing between his 21 messages ranged from two to 156 days. Typically, he published at the end of the month but also published fairly often during the beginning and middle of the month. The CSAF distributed nearly one-half (10 of 21) of his messages between April and September 2007.

Joint SECAF/CSAF messages appeared almost every two months in 2005 and 2006. Six of the eight joint SECAF/CSAF messages appeared during 2006; the other two appeared in 2005, and none appeared in 2007 or the first half of 2008.

Like the CSAF, the CMSAF's 15 messages were released at inconsistent intervals. Intervals between publication ranged from a week to 87 days, and the CMSAF typically wrote at the beginning or end, but rarely at the middle, of the month.

Coding Methods

- All messages were entered into qualitative data analysis software (QSR N6)
- Two individuals worked in tandem
- Exploratory list of codes based on Air Force Culture Study themes was expanded to capture additional themes in messages
- Codebook was developed to capture general categories of Air Force culture–related themes
- Consistency between coders was acceptable

RAND DB583-7

We conducted a content analysis of the messages with the assistance of a qualitative software program called QSR N6.¹ Content analysis is a systematic, iterative process used to identify key themes in a sample of qualitative data (in this case, text). In general, a *theme* is a specific, identifiable subject within a larger piece of communication. In our specific context, however, we narrowly use the term as referring to an identifiable verbal concept that can be related to others.² *Content analysis* involves applying explicit guidelines (called *codes*) to identify and distinguish among themes when analyzing certain groupings of text. Hence, content analysis is a judgment-based process used to classify data.

For this content analysis, we first examined each sentence and coded it according to the theme or themes it contained. Alternatively, we might have chosen to examine the messages line

¹ QSR International released version 6 of its qualitative data analysis software in 2002. For more information on content analysis methodology, see Klaus Krippendorff, *Content Analysis: An Introduction to Its Methodology*, 2nd ed., Thousand Oaks, Calif.: Sage Publications, 2004.

² Gery Ryan and H. Russell Bernard, “Techniques to Identify Themes,” *Field Methods*, Vol. 15, No. 1, February 2003.

by line or paragraph by paragraph or could have looked at the message as a whole. Two coders each coded approximately one-half the total of 70 messages, with a 14-message overlap.³

As is common in content analysis, we created an initial list of themes derived from research questions and an exploratory initial analysis of the text.⁴ In keeping with the methodology, we created an initial set of mutually exclusive codes and then reviewed the code definitions to refine inconsistencies due to coder error, redundant codes, unclear terminology, vague definitions, and misinterpretation of the text in each iteration of the review process.⁵ During each review, codes were added, removed, or refined to better identify themes.

The two coders worked closely together during this process to ensure that their consistency was high. A systematic evaluation of both the inherent utility of the codes and the coders' ability to apply the codes consistently typically occurs following analysis of a small, random portion of the data.⁶ If a code is very infrequent or is applied inconsistently, either the criteria for the code are revised to represent the inherent theme within the text more accurately, or the code is discarded. This review process is repeated to ensure reliable analysis; codes should be consistently applied between coders, and codes should represent a wide range of themes without being exhaustive.⁷ A reliable and valid list of codes obtains when the guidelines are explicit and clear and when coder agreement is maximized to apply themes to the data.⁸

After resolving unclear codes to maximize the reliability and validity of codes, the coders used the revised set of codes to recode all the text. Then, we used a quantitative test to measure whether both coders encoded all codes the same way. These tests calculate a coefficient ranging from zero (agreement equivalent to chance) to one (perfect agreement between coders).

There are several measures for coder agreement. The most simplistic is a calculation of the percentage of agreement between coders. We employed Perrault and Leigh's "index of reliability" to measure the intercoder reliability because it is more robust than simple agreement and because its underlying assumptions fit this analysis better than the more commonly used Cohen's kappa statistic did.⁹ Appendix B provides a more-technical discussion of these statistics. Index of reliability values greater than 0.8 reflect "strong agreement" between coders, and values greater than 0.95 represent "near perfect agreement."¹⁰

³ A 20-percent overlap is desirable for calculating intercoder reliability. See James W. Carey, Mark Morgan, and Margaret J. Oxtoby, "Intercoder Agreement in Analysis of Responses to Open-Ended Interview Questions: Examples from Tuberculosis Research," *Cultural Anthropology Methods*, Vol. 8, No. 3, 1996, p. 3.

⁴ An initial list of themes is often created to account for little knowledge about the themes prior to analysis. See Kathleen M. MacQueen, Eleanor McLellan, Kelly Kay, and Bobby Milstein, "Codebook Development for Team-Based Qualitative Analysis," *Cultural Anthropology Methods*, Vol. 10, No. 2, 1998, pp. 31–36; Carey, Morgan, and Oxtoby, 1996; and M. B. Miles and A. M. Huberman, *Qualitative Data Analysis*, 2nd ed., Thousand Oaks, Calif.: Sage Publications, 1994.

⁵ MacQueen et al., 1998; Carey, Morgan, and Oxtoby, 1996.

⁶ MacQueen et al., 1998, pp. 33–34.

⁷ MacQueen et al., 1998, p. 34.

⁸ Ryan and Bernard, 2003.

⁹ See William D. Perrault, Jr., and Laurence E. Leigh, "Reliability of Nominal Data Based on Qualitative Judgments," *Journal of Marketing Research*, Vol. 26, May 1989, pp. 135–148, for a full description of the "index of reliability" and its use in comparison to Cohen's kappa statistic. See also Kent Grayson and Roland Rust, "Interrater Reliability," *Journal of Consumer Psychology*, Vol. 10, Nos. 1–2, 2001.

¹⁰ Perrault and Leigh, 1989, pp. 146–147.

Our analysis of senior leadership messages produced an intercoder reliability rating of approximately 89 percent, with an approximate 1.7 percent standard error. The 95-percent confidence interval for the index of reliability was (0.8549, 0.9202). Even taking a conservative stance and assuming the lower bound of the confidence interval (0.8549) to be the measure of intercoder reliability, our results were still within the intercoder reliability range, greater than 0.8, reflecting strong agreement. Because of the high degree of reliability between coders for the senior leader messages, the results presented in this text may be viewed with strong credibility.¹¹

¹¹ Carey, Morgan, and Oxtoby, 1996.

Coding Categories Related to Goals

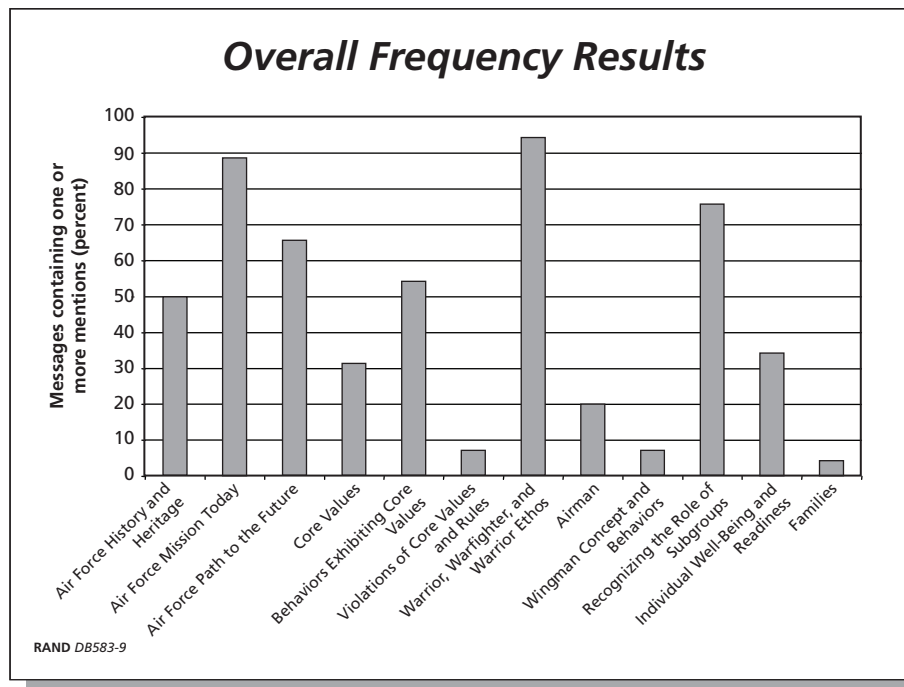
- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Define the organization <ul style="list-style-type: none"> • Air Force History and Heritage • Air Force Mission Today • Air Force Path to the Future 2. Promote Air Force values <ul style="list-style-type: none"> • Core Values • Behaviors Exhibiting Core Values • Violations of Core Values and Rules 3. Create a shared identity across individuals <ul style="list-style-type: none"> • Airman • Warrior, Warfighter, and Warrior Ethos • Wingman Concept and Behaviors | <ol style="list-style-type: none"> 4. Foster a forcewide sense of value, recognition, and belonging <ul style="list-style-type: none"> • Recognizing the Role of Subgroups 5. Care for Airmen <ul style="list-style-type: none"> • Individual Well-Being and Readiness • Families |
|---|--|

RAND DB583-8

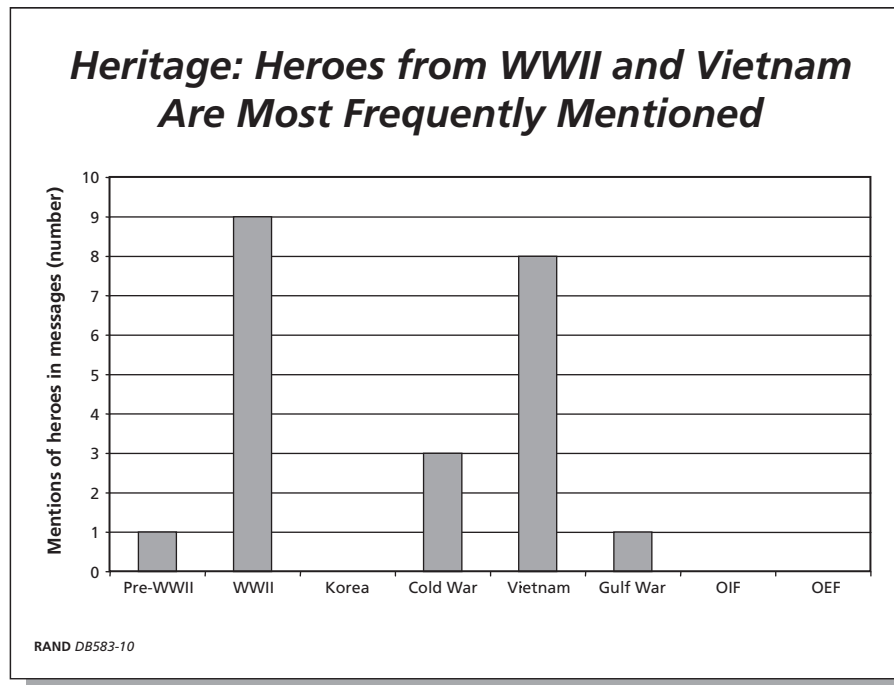
We developed the coding scheme by starting with the themes we had identified from the larger project on Air Force culture. The final coding categories are presented here as they relate to each organizational goal. Appendix A contains the final version of the codebook used for this message-content analysis. The codebook describes what each code did and did not include and provides sample sentences for each particular code.¹ Following the coding, we analyzed each theme for frequency, subthemes, content, and authorship. The results demonstrate how many messages from these senior leaders contained sentences devoted to each relevant theme.

¹ For further information about codebook development, see MacQueen et al., 1998, p. 32.

Results



This slide shows the percentages of the 70 messages analyzed containing a theme in each major coding category. This graph indicates the relative frequency of mentions across all categories. The following pages will address subsets of these categories more closely according to the stated Air Force goals.



Goal 1: Define the Organization

One way to define an organization is through its stories: who and what its members celebrate. We examined mentions of Air Force heroes, which we defined as any individual who displays actions or characteristics an author presented as worthy of imitation or recognition. This graph shows the number of identified heroes according to the war era in which they accomplished their heroic feats.

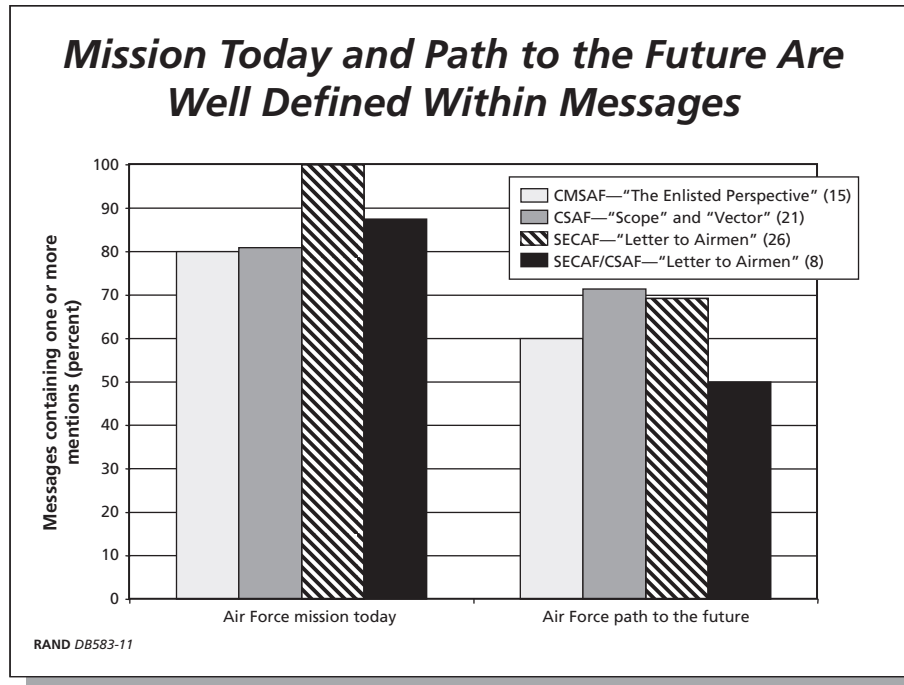
The number of heroes identified per war period was calculated by summing the number of heroes mentioned within the articles per period. For example, a total of nine unique heroes from World War II (WWII) appeared within the 70 messages. Even if one hero was mentioned multiple times, that individual was counted only once in this chart.

Pre-WWII-period hero Maj Gen William “Billy” Mitchell is considered the father of the U.S. Air Force. Together, he and the WWII heroes were portrayed as “pioneers of airpower” and “heroic visionaries and practitioners” of Air Force heritage. He was the only pre-WWII hero identified in the messages. Six of the nine WWII heroes were mentioned multiple times, while the other three were mentioned less frequently (once or twice in total out of the 70 messages). The six prominent WWII-era individuals were Gen Henry H. “Hap” Arnold, Gen Carl A. “Tooey” Spaatz, Lt Gen Claire Lee Chennault, Gen Jimmy Doolittle, Gen Curtis E. LeMay, and Gen Bernard Schriever. The remaining three celebrated role models were Brig Gen Paul W. Tibbets, Jr., the Tuskegee Airmen (as a group), and Gen Hoyt S. Vandenberg. Generally, the CSAF cited these names in his communications without information on their backgrounds, assuming that information to be common knowledge among the audience.

Senior leaders also focused on the operational achievements of heroes from the Vietnam War. Vietnam heroes were heralded for bravery and exceptional mission performance. Of the six named heroes from the Vietnam era, four were mentioned in a single message from the CSAF illustrating the “wingman” concept. The story described how copilots Capt Bob Pardo

and 1st Lt Steve Wayne risked their own lives and maneuvered their aircraft to push, midair, the badly damaged aircraft of Capt Earl Aman and 1st Lt Robert Houghton until all were in a position to eject over friendly rather than hostile airspace. The other two heroes highlighted were Brig Gen Robin Olds and CMSgt Gary R. Pfingston; the latter was heralded not only for his Vietnam-era contributions but also for his efforts as an advocate of Airmen's professional needs and personal well-being during service as CMSAF during Operation Desert Storm. Two Cold War-era heroes from the Berlin Airlift operations were recognized: Maj Gen William H. Tunner and 1st Lt Gail Halvorsen.

Because there were no references to Air Force heroes from Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF) in the messages analyzed, the RAND research team compiled references to Air Force heroes from OIF, OEF, and other operations during this era from the Department of Defense (DoD) and Air Force Web sites and provided that collection to the study sponsor.



The mission and envisioned future of the Air Force were frequently mentioned and defined in the messages from all three senior leaders. The stated Air Force mission in this period was “to deliver sovereign options for the defense of the United States of America and its global interests—to fly and fight in Air, Space, and Cyberspace.”¹ Therefore, sentences referring to sovereign options, the Global War on Terror, the role of the Air Force since Desert Storm, defending the Constitution, Air Force tasks, and responding to any other active threats to the Air Force were incorporated under the code “Air Force Mission Today.” For example, in a message dated November 9, 2006, the CMSAF states:

Today, more than 30,000 are deployed worldwide with many more deployed in place, and more than 4,000 Airmen protecting America’s skies. In the Global War on Terror, we fly more than 250 missions a day, 45 of which are strike missions against the enemy.²

The code “Air Force Path to the Future” encompassed descriptions about how the Air Force is changing operations and improving personnel, about future acquisitions, force-shaping measures, future threats to the Air Force, and any mention of the Air Force Vision or elements of that vision for the future. One illustrative statement conveys the role of leaders in developing Airmen: “Our job as leaders is to keep this Warrior Ethos alive in our Airmen—refining their fire and spirit as we continue to foster their development.”³

The Air Force Vision statement used for this coding was outlined on the Air Force Web site:

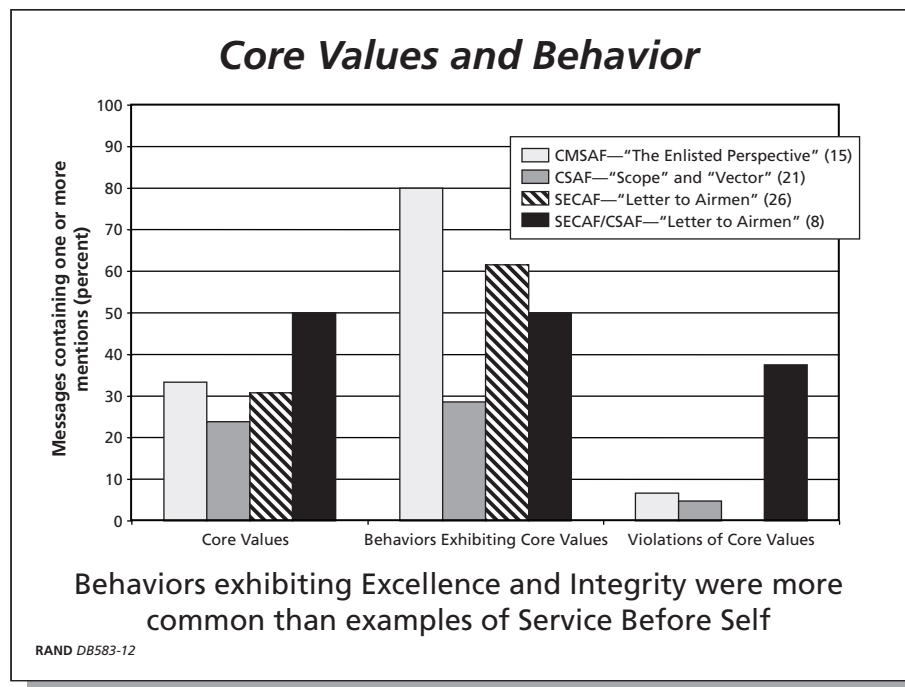
¹ *Air Force Link*, Welcome page, “Air Force Mission.”

² CMSgt Rodney J. McKinley, CMSAF, “The Enlisted Perspective: Airman Pride,” November 9, 2006.

³ CMSgt Rodney J. McKinley, CMSAF, “The Enlisted Perspective: Developing and Caring for Airmen,” July 2007b.

To achieve [the Air Force] mission, the Air Force has a vision of Global Vigilance, Reach and Power. That vision orbits around three core competencies: Developing Airmen, Technology to Warfighting and Integrating Options. These core competencies make our six distinctive capabilities possible. One, Air and Space Superiority: with it, joint forces can dominate enemy operations in all dimensions—land, sea, air, and space. Two, Global Attack: because of technological advances, the Air Force can attack anywhere, anytime—and do so quickly and with greater precision than ever before. Three, Rapid Global Mobility: being able to respond quickly and decisively anywhere we're needed is key to maintaining the rapid global mobility. Four, Precision Engagement: the essence lies in the ability to apply selective force against specific targets because the nature and variety of future contingencies demand both precise and reliable use of military power with minimal risk and collateral damage. Five, Information Superiority: the ability of joint force commanders to keep pace with information and incorporate it into a campaign plan is crucial. Six, Agile Combat Support: deployment and sustainment are keys to successful operations and cannot be separated. Agile combat support applies to all forces, from those permanently based to contingency buildups to expeditionary forces.⁴

⁴ *Air Force Link*, 2008.



Goal 2: Promote the Core Values and the Corresponding Behaviors

Integrity First, Service Before Self, and Excellence in All We Do are the three core values of the Air Force and are outlined more fully in an official document commonly known as “The Little Blue Book.”¹ This book was widely disseminated throughout the Air Force and taught during early socialization phases (e.g., Basic Military Training, Reserve Officer Training Corps, the Air Force Academy). We used an unpublished 2005 draft revision of this document in our research on Air Force culture and to guide coding of messages on these values.²

We coded messages for any reference to one or more of the core values to determine the prevalence in the messages by the top leaders. Top leaders frequently named all three values individually and usually mentioned all together. They also commonly provided examples of behaviors exhibiting Excellence in All We Do and Integrity First, such as “The Air Force core value of Excellence in All We Do translates into direct action when we apply our values to energy conservation,” and “Integrity First means not only physical courage, but moral courage as well, so that we sometimes stand up by speaking up.” Service Before Self, however, was less often defined through examples of corresponding everyday behaviors. Service Before Self tended to be equated with sacrifice, but explicit applications or translations into behavior in everyday life were less common. One example provided in this context was of National Guardsmen who volunteered for deployment.

The core values are principles intended to be embraced across the Air Force population, regardless of position, mission, or subculture. These moral guidelines offer Air Force personnel a real and tangible aspect of their organizational identity that they can apply in their everyday

¹ Department of the Air Force, *United States Air Force Core Values (“Little Blue Book”)*, Washington, D.C., 1997.

² Department of the Air Force, *United States Air Force Core Values (“Little Blue Book”)*, rev., unpublished draft, Washington, D.C., 2005.

lives.³ Our sample of senior leader messages provided examples of behaviors that exemplified core values more frequently than examples of violations of standards of conduct. The code “Behaviors Exhibiting Core Values” included statements like this from CSAF:

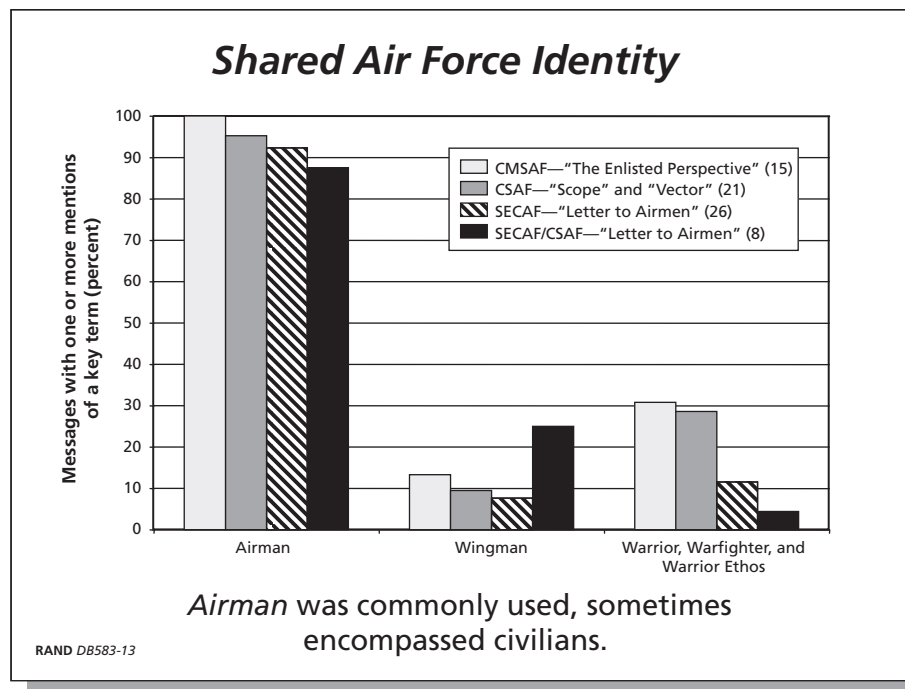
Whether deployed for expeditionary operations, at home station training for the next deployment, or conducting daily work for the Nation’s Combatant Commanders, the expectations for all Airmen are the same: commanders command, supervisors lead, and, from the most junior Airman to the highest levels of command, we all follow checklist procedures, comply with applicable directives, and focus on our assigned missions or tasks.⁴

Negatively focused statements, such as “loss of focus can lead to failure: failure to execute the mission in a disciplined and accountable manner,” were coded under “Violations of Core Values.”⁵

³ Jay B. Barney, J. Stuart Bunderson, Peter Foreman, Loren T. Gustafson, Anne S. Huff, Luis L. Martins, Rhonda K. Reger, Ylanda Saranson, and J. L. Stimpert, “A Strategy Conversation on the Topic of Organization Identity,” in David A. Whetten and Paul C. Godfrey, eds., *Identity in Organizations: Building Theory Through Conversations*, Thousand Oaks, Calif.: Sage Publications, 1998, pp. 99–165.

⁴ Gen T. Michael Moseley, Chief of Staff of the Air Force, “CSAF’s Vector: Discipline,” September 2007.

⁵ Moseley, 2007.



Goal 3: Promote Shared Identity Across the Air Force Regardless of Air Force Specialty Code, Major Command, Rank, or Component

In 1989, Carl Builder noted that Air Force personnel, when asked what they do for a living, were more likely to identify with the weapon system they operate (e.g., “I’m an F-15 pilot”) than to mention a broader identity (e.g., “I’m an Airman” or “I’m an Air Force officer”).¹ Others since then, including a former secretary of the Air Force and staff, faculty, and student Air Force officers surveyed at Maxwell Air Force Base in 1996, agreed that too strong an affiliation with functions or weapon systems can undermine primary identification with the overarching organization and its values.² Identification with a specific weapon system or area of expertise is not necessarily negative, however. Subcultures within an organization can be important sources of commitment. What is important is a balance between identification with a specific subculture and identification with the organization as a whole.³

General Moseley extended the use of term *Airmen* to include civilian employees. That concept has yet to be widely accepted, however, and diverges from the other services: sailor, soldier, and Marine are not inclusive of Navy, Army, and Marine Corps civilians. This initiative raises the question of whether there should be a single term that encompasses military and civilian personnel and gets at the heart of a larger dilemma: Where do we draw the line between inclusiveness and acknowledgment of the value of everyone’s contribution on one side

¹ Carl H. Builder, *The Masks of War: American Military Styles in Strategy and Analysis*, Baltimore, Md.: Johns Hopkins University Press, 1989.

² Lt Col James M. Smith, “Air Force Culture and Cohesion: Building an Air and Space Force for the Twenty-First Century,” *Airpower Journal*, Vol. 12, No. 3, Fall 1998, pp. 40–53.

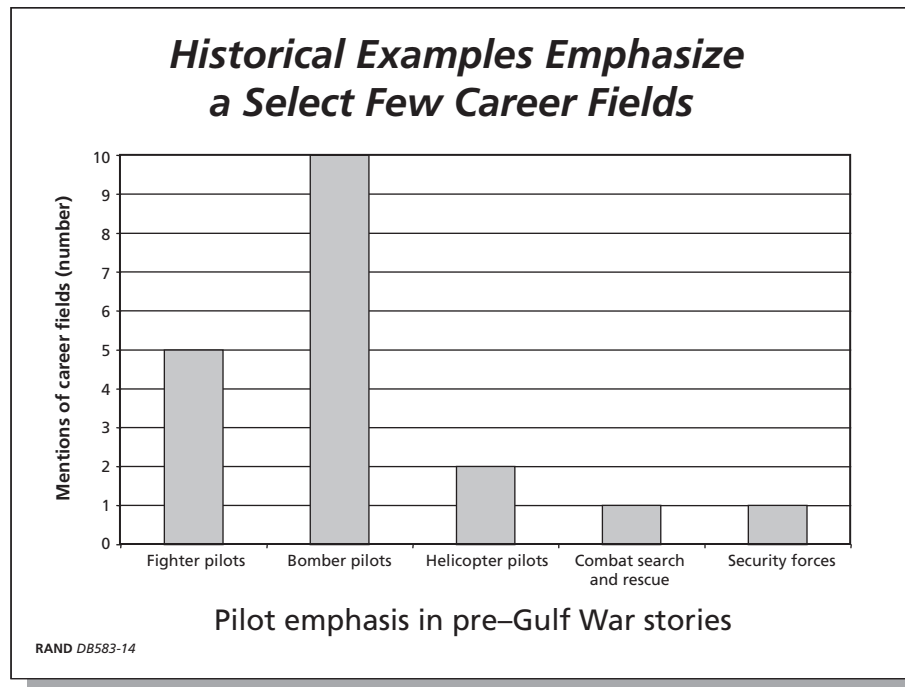
³ Gioia, Schultz, and Corley, 2000.

and preserving a distinction that allows us to recognize real differences within the population in terms of skill, commitment, and achievement?

Results from an Air Force Internal Communications Assessment Group (ICAG) internal poll (December 21, 2007) found that the majority of officer and enlisted respondents said they felt a personal connection to the statement “I feel like an Airman” (85 and 81 percent, respectively) but that only 48 percent of civilian respondents had similar feelings. However, 40 percent of civilians said, “I don’t feel like an Airman and that is okay with me.” These results are in line with the inconsistent use of the term *Airman*, sometimes encompassing Air Force civilians, other times only including military personnel.

The *wingman* concept and intended shared identity was also promoted during the time frame of this analysis to foster a norm of Air Force personnel looking out for one another: bonding to colleagues and not just to their equipment or jobs. Senior leaders extended the use of the term *wingman* as a common identity for Air Force personnel, not just pilots who fly in formation. On that same ICAG poll, associations with the statement “I feel like a wingman” were also high among Air Force military members, at 81 percent for both officers and enlisted, and were somewhat lower at 63 percent of Air Force civilian employees. For feeling like both an Airman and a wingman, 13 percent of civilians said they did not feel like either an Airman or a wingman, but wish they did.

To help Air Force personnel orient toward the nature of their missions under OEF and OIF, senior leaders invoked the notion of a warrior ethos and discussion of *warrior* and *warfighter* identities. In 2007, Gen T. Michael Moseley, then-CSAF, established the Airman’s Creed to invigorate the warrior ethos of Airmen and represent the warfighting-focused culture. Results from another ICAG poll on Slogans, Airman’s Creed, and Warrior Ethos (October 1, 2007) found 75 percent of respondents were familiar with the Airman’s Creed; however, only 59 percent of officers and 49 percent of enlisted respondents said they feel like a warrior.



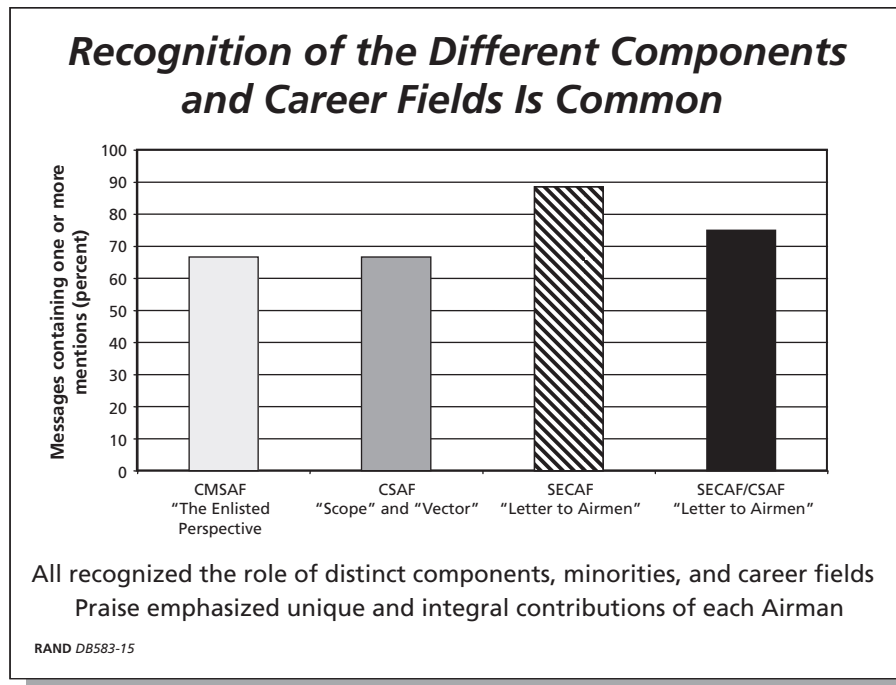
Goal 4: Ensure That Everyone in the Air Force Is Valued and Recognized and Feels a Sense of Belonging

At the same time as the Air Force leadership strives to create a shared identity across the organizational population, it also wants to ensure that the unique contributions of all of its types of members are properly recognized. In historical accounts, senior leaders identified Air Force heroes in the pilot career field far more frequently than they mentioned role models in any other career fields. Overall, operational career fields were emphasized far more than nonrated career fields.

The above graph identifies the number of times a senior leaders' message identified a career field in a historical context, in a story identifying exemplary operational action, in a brief reference to the career field for encouragement, or in any general brief reference. The bomber community is the most frequently cited in the context of missions in WWII. The pilot community was also mentioned, through heroic examples from Vietnam and the Berlin Airlift operations during the Cold War. An entire message was devoted each to the combat search and rescue and to the helicopter career fields.

Only about 5 percent of Air Force military members are pilots (24 percent of officers); therefore, these historical references do not adequately encompass the range of career fields of both military members and civilian employees.¹

¹ Percentage of pilots in the USAF calculated using the Interactive Demographic Analysis System (IDEAS), the Air Force Personnel Center, Randolph Air Force Base, Tex.



In contrast to the limited number of career fields represented in historical examples, senior leaders' messages about current operations recognized the contributions of a wide range of subgroups within the Air Force. One example highlighted the roles of many and what they share in common:

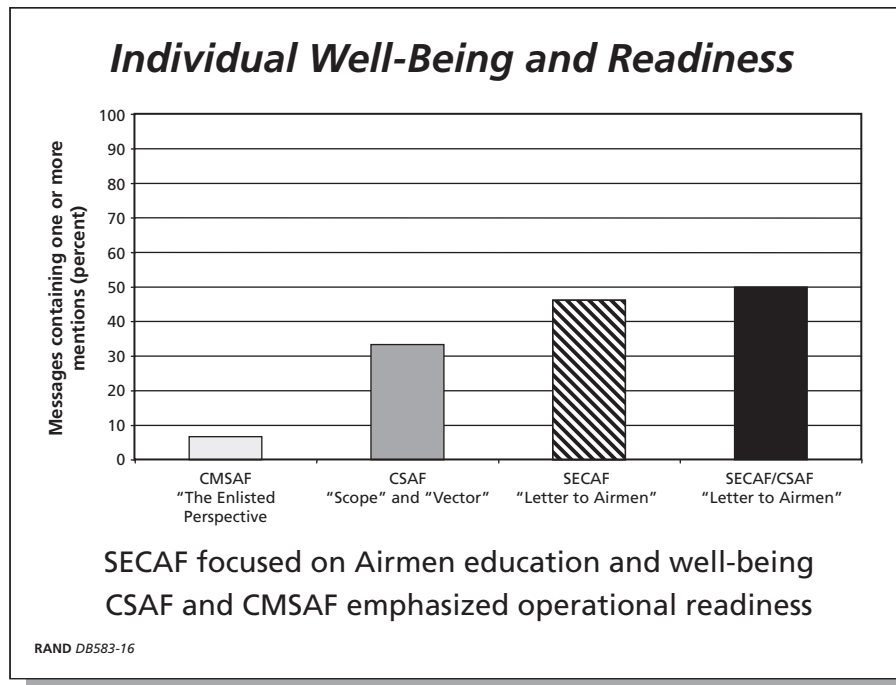
From our Airmen serving in convoy operations in Iraq to Information Warriors denying hacker attacks to Space Operators bringing in new capabilities to Special Ops Airmen in the field to Aircrew protecting the skies of our Nation—all benefit from a better knowledge of enemy tactics and capabilities as well as the confidence and experience gained from “bat-tling” Red Forces on real and virtual ranges.¹

Another example emphasized unity despite demographic variation: “We are all Airmen, and under enemy fire the race, religion, sex or geographic origin of the Airman fighting next to us is irrelevant.”²

Recognition of subgroups was coded as any mention of Air Force personnel as part of a specific group, including career field, component of the Total Force, age bracket, geographic origin, gender, ethnicity, or any other defining social characteristics of a subgroup of the population. Praise aimed at “you, the individual Airman” was also coded in this category, as fostering a sense of belonging for everyone in the general population. Component and individual recognition were especially strong within the messages, although demographic and career field mentions were also consistently recognized, albeit not quite as strongly.

¹ Gen T. Michael Moseley, CSAF, “CSAF’s Vector: Advanced Composite Force Training,” January 5, 2006.

² Gen T. Michael Moseley, CSAF, and Michael W. Wynne, SECAF, “Letter to Airmen: Diversity and the United States Air Force,” July 31, 2006.



Goal 5: Promote the Well-Being and Readiness of Individual Airmen

Caring for the overall health and well-being of Airmen is a top priority for the senior Air Force leadership. Indeed, development of Airmen is one of the three core competencies of the Air Force Vision. Additionally, the SECAF's Goal Card specifically states a desired goal of "Joint and Battle Ready Trained Airmen." Given these priorities and the need to maintain strong levels of operational performance in wartime, senior Air Force leaders actively addressed the goal by establishing programs (i.e., Wingman Day in 2004) and discussing the concept in messages to Airmen.

Specifically, senior leaders discussed two aspects of individual well-being for Airmen: operational readiness related to training for the rigors of war (which appeared on the SECAF's Goal Card) and personal development. Individual well-being and readiness codes in this study encompassed any references to health, physical fitness, education, finance, relationships, deployment, and stress issues that could be pertinent to the well-being of Airmen or that result from Air Force life.

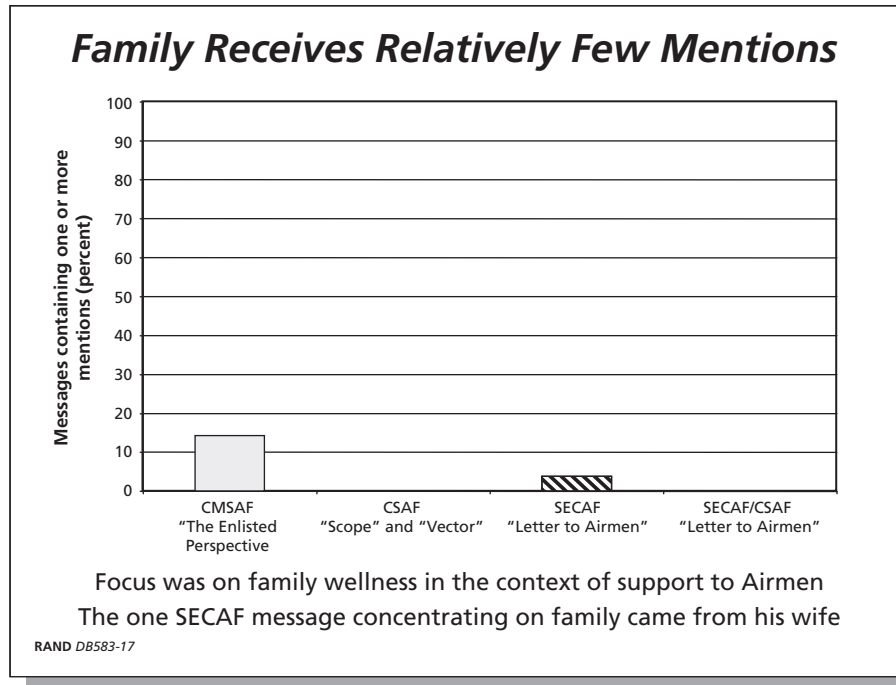
The three leaders approached well-being and readiness of Airmen from three distinct perspectives. The CSAF's messages focused on the personal development of Airmen as individuals: "we are all aware that we must maintain our intellectual superiority with lifelong education for all Airmen—officer and enlisted."¹ The CSAF focused on operational readiness for Airmen; for example, "the expectations for all Airmen are the same: . . . we all follow checklist procedures, comply with applicable directives, and focus on our assigned missions or tasks."² The CMSAF

¹ Michael W. Wynne, SECAF, "Letter to Airmen: Education and the Airman," April 2006.

² Moseley, 2007.

focused on compliance with rules and regulations for individual readiness: “Maintaining physical fitness and dress and appearance standards are individual responsibilities.”³

³ CMSgt Rodney J. McKinley, CMSAF, “The Enlisted Perspective: Importance of Physical Fitness,” May 2007a.



Although the sponsors of this research have emphasized to us that Air Force staff care greatly about the well-being of Air Force families, that priority was not reflected in the senior leaders' messages we analyzed and may not be adequately understood by Airmen. Such official documents as the SECAF's Goal Card and the Air Force Vision make Airmen's development a goal but do not explicitly state that taking care of Airmen's families is also a priority.

The relative lack of emphasis in senior leadership messages on taking care of families could be interpreted as a sign that it has a low priority. Three of the 70 messages focused on Airmen's families. These thanked families for their sacrifices, and one promoted programs for families taking care of wounded Airmen. Families were also mentioned in passing (never more than a paragraph) in other messages, but the focus was consistently on family well-being in support of the Airman. Unaddressed were such family-centered issues as how Air Force life affected families (e.g., stress from deployments or relocations) or how Airmen could balance family life with mission demands.

Recommendations and Conclusions

Goal 1: Define the Organizational Identity

- Conclusions
 - Messages consistently and frequently defined the mission, future direction of the Air Force, and importance of the Air Force heritage
 - Messages made certain priorities explicit: taking care of Airmen, winning the Global War on Terror, and refurbishing the aging fleet
- Recommendations
 - Introduce current and recent heroes
 - Make explicit how today's mission is linked to past missions (e.g., WWII bombing runs)
 - Highlight the historical roles of the predecessors of space and cyberspace missions

RAND DB583-18

Overall, the SECAF, CSAF, and CMSAF achieved a strong level of consistency when framing the organizational identity through these modes of communication. Senior leaders congruently discussed the Air Force mission, vision, and past heritage. Achieving a high level of consistency over time in messages from multiple organizational leaders can be difficult, so these senior Air Force leaders should be commended for achieving high levels of consistency when discussing these goals and priorities. The following recommendations offer strategies to further maximize the effectiveness of senior leadership messages.

Although the SECAF, CSAF, and CMSAF consistently called up past Air Force heroes and mission excellence, the range of experiences from which they drew their examples may not connect with all audiences. Heroes identified in the messages are overwhelmingly pilots and come from the earliest years of the Air Force. Incorporating heroes from more recent (post Vietnam) and current conflicts and from a broader range of career fields may inspire a larger portion of the Air Force community and may help them connect their present to their heritage.

Other Air Force publications, such as CSAF Moseley’s “Portraits in Courage” series, highlight a more-diverse group of Air Force heroes.

Messages regularly outlined the current mission and future of the Air Force but did not always link today’s mission to those of the past. The senior leaders frequently cited historical examples to emphasize current priorities but, perhaps because of the narrow use of Air Force history (i.e., citing pilot operations), did not always discuss elements of today’s mission in their historical context. For example, while space and cyberspace capabilities were identified as key mission areas today, their historical predecessors were not cited. Outlining precursors to today’s space and cyberspace mission may also help contextualize these mission areas.

Goal 2: Promote Core Values

- Conclusions
 - Core Values and related behaviors were emphasized
 - Service Before Self was defined through the lens of sacrifice, but the definition of *sacrifice* itself remained broad
- Recommendations
 - Explain Service Before Self through everyday examples
 - Mention Service Before Self more often in messages that focus on more than this specific Core Value

RAND DB583-19

Core values are frequently mentioned throughout the messages from all three senior leaders. Excellence in All We Do and Integrity First are well defined, both conceptually and as they are exhibited by behavior. How senior leaders define Service Before Self, however, is less clear. Although Service Before Self was broadly linked to patriotism and the call to military service, clarifying the practical meaning of Service Before Self and how it could be applied in daily life may improve understanding and its use as a personnel management tool.

Goal 3: Promote Shared Identity

- **Conclusions**
 - The term *Airmen* was used routinely throughout the messages
 - No messages were disseminated about Wingman Day
- **Recommendations**
 - Clarify whether *Airmen* includes civilians
 - Appropriately emphasize the priority of Wingman Day by releasing a message from CSAF (perhaps to be disseminated by the A1s) to prepare for and advertise it

RAND DB583-20

The SECAF, CSAF, and CMSAF consistently employed the term *Airmen* to refer to Air Force personnel; however, it was not clear which Air Force personnel the term encompassed. Air Force active-duty, Reserve, and National Guard personnel were consistently associated with the term, but civilians were sometimes also included. The rationale for including civilians is to emphasize that all Air Force personnel belong to a single community and that all are equally valued. One rationale for excluding civilians, although the scenario is unlikely, is that considering civilians to be “Airmen” could have unclear ramifications under the Law of Armed Conflict if Air Force civilians are attacked. Senior leaders should agree upon and clarify to Air Force personnel their appropriate use of the *Airmen* term. Thus, a message in which senior leaders use *Airmen* and mean to include civilian personnel might be interpreted as applying only to military personnel. Unless this is clarified, confusion and inconsistent use of the term among the Air Force population and by outsiders are likely.

The term *wingman* was used regularly as another overarching identity and to promote the wingman concept of Air Force personnel looking out for one another. Since 2004, the Air Force has celebrated Wingman Day annually forcewide to emphasize wingman-type behaviors. However, the senior leader messages during this period made no attempt to explain or promote attendance at Wingman Day. To highlight the significance of this event and other important Air Force cultural innovations, senior leaders should release messages encouraging participation for these new and valued activities.

Goal 4: Recognize All Subgroups

- Conclusions
 - Pilots were frequently recognized as past heroes
 - Messages pointed out the roles of components, career fields, and differing demographics in today's Air Force
- Recommendations
 - Integrate recent examples of heroic action (such as those found in CSAF's "Portraits of Courage") into messages from senior leaders to help Airmen to better identify with the operational excellence and heroism exhibited in current wars

RAND DB583-21

Messages from the SECAF, CSAF, and CMSAF frequently addressed the importance of every individual Airman and the contributions of the multiple components of the Air Force. The senior leaders acknowledged the contributions of various career fields and affirmed inclusion, regardless of such statuses as gender, race, ethnicity, and national origin.

Few heroes from operations since the Vietnam War served as role models in senior leader messages. More-recent examples of heroes from different career fields and backgrounds would highlight examples of operational excellence in today's Air Force.

For example, cyberspace is becoming an increasingly important and yet still seemingly new operational area for the Air Force. Yet it too has a long historical context that is alive and well, in the field of communications. Showing today's Airmen how their predecessors protected and utilized communications assets would allow Airmen to tap into the historical significance of communication operations and apply that understanding to today's information operations.

Goal 5: Promote Care for Airmen

- Conclusions
 - The SECAF focused on education of Airmen and their personal well-being; the CSAF and CMSAF focused on mission readiness
 - Families were mentioned in relation to how they support the Airman; family issues were emphasized less
- Recommendations
 - Devote a message to the topic of families
 - Perhaps in conjunction with a family program or event announcement (e.g., Military Family Month in November)
 - Emphasize family well-being
 - Offer advice on how to balance family needs with mission demands
 - Advise commanders and supervisors on how to assist families and promote their well-being

RAND DB583-22

Senior leader communications to Air Force personnel routinely reinforced their concern for Airmen and their well-being. It is, of course, appropriate that different senior leaders emphasized different aspects of the same concept because they have different areas and levels of responsibility to manage. For the SECAF, the underlying focus in this context was the individual Airman and his personal and professional development. The CSAF's messages focused on readiness and Airmen's mission preparedness. The CMSAF's messages concentrated on rules and regulations for Airmen's compliance and readiness. Taken together, these messages conveyed the concerns of the top leaders and highlighted many important issues within the force.

Although all three top leaders at least mentioned families in passing, family well-being was not adequately conveyed as a top concern within these messages. Only three of the messages in this period focused on family. Further, families are often referred to in the context of how they support their Airmen, rather than how to balance family life with mission demands or how military service affects families. Given that existing evidence indicates that the quality of military family life affects operational performance and increases strain on military families during wartime, the senior leadership should emphasize family well-being.¹ A message devoted to conveying leaders' concern for family needs and how to balance family needs with the demands of Air Force duties during wartime would convey leaders' concern for families and recognition of their sacrifices.

¹ Benjamin R. Karney and John S. Crown, *Families Under Stress: An Assessment of Data, Theory, and Research on Marriage and Divorce in the Military*, Santa Monica, Calif.: RAND Corporation, MG-599-OSD, 2007, and James Hosek, Jennifer Kavanagh, and Laura Miller, *How Deployments Affect Service Members*, Santa Monica, Calif.: RAND Corporation, MG-432-RC, 2006.

Overall

- Conclusions
 - Messages were distributed sporadically and may therefore not have been read consistently
 - Message emphasis varies depending on the source:
 - The SECAF tended to emphasize development of Airmen as individuals
 - The CSAF tended to emphasize operational readiness and the overall readiness of Airmen
 - The CMSAF tended to emphasize specific rules, regulations, and processes for operational readiness
- Recommendations
 - Release or post messages at a set time each month so that Airmen know when to look for the emails or revisit *Air Force Link*
 - Consider emailing all messages directly to Airmen, taking advantage of the “all Airmen” email alias

RAND DB583-23

Most of the SECAF’s “Letters to Airmen” were published in the beginning of the month (first 10 days), and at least one message from him was published nearly every month. Messages from the CSAF and CMSAF, however, were less frequent, and were sporadic, and were released at inconsistent times of the month. If an Air Force Web site is to be the primary access to these messages, publishing them routinely, at consistent intervals (e.g., monthly or every other month around the same time of the month) would be beneficial because Air Force personnel would know when to look for a new message. Also, senior leaders should consider using the new “all Airmen” email address for disseminating the messages, which may be more reliable than depending upon proactive readership on *Air Force Link* or commanders passing the messages on to their subordinates. Online social networking tools offer another possible avenue for reaching Air Force personnel. Consistent release and multiple methods of dissemination should improve message exposure.

Overall, the messages were congruent and did not contradict each other or the goals of the Air Force in any way. This consistency in communications should be achieved without sacrificing the genuine, personalized tone of each individual leader. All the messages we examined from the three top leaders supported, at least to some degree, their established goals to define the organization, promote core values, promote shared identity across the force, recognize the contributions of all subgroups, and care for the welfare of Air Force personnel.

Codebook

This codebook describes the final codes used for this analysis. It does not include early exploratory codes that are now subsumed under these codes.

Organizational Identity

Air Force History and Heritage

1. *Definition:* specific Air Force history and heritage mentioned with particular examples. Context is the history and heritage used to display pride and exemplify contributions of prior heroes.
2. *Inclusion Criteria:* any mention of Air Force history, the words heritage and hero (include variants of the words); particular exemplars within USAF history; contributions of particular individuals, aircraft, or monuments; or overall contributions of the Air Force to wars.
3. *Exclusion Criteria:* random history dates for the Air Force. Only history or heritage mentioned within the context to convey pride, glory, and honor.
4. *Examples:*
 - a. Brig Gen Billy Mitchell, Gen Henry H. “Hap” Arnold, Doolittle, Spaatz, Chennault, etc.
 - b. “Even before our current fight to win the Global War on Terror, more than 52,000 brave Airmen gave their lives during World War II alone on the ground and flying in B-17s, B-24s and other aircraft—we must never forget their sacrifices.”
 - c. “To my fellow Airmen, Our Air Force has an incredible heritage . . . a heritage built on courage, valor, brilliance, and perseverance.”
 - d. “The men and women who will make up this unit will inherit a proud heritage: USAF Aggressors. The squadron last flew F-5Es at Nellis from 1975 until 1989, where their blue and brown jets became legend as part of Red Flag.”

Air Force Mission Today

1. *Definition:* the Air Force mission and associated context.
2. *Inclusion Criteria:* any mention of the Air Force mission, keywords in the Air Force mission, the word mission, any statements from the Air Force leadership describing the mission of the Air Force, mention of the Global War on Terror, the Air Force being at

war for the last 16 years, defending the U.S. Constitution, completing Air Force tasks, active threats to the Air Force.

- a. Air Force Mission: The mission of the United States Air Force is to deliver sovereign options for the defense of the United States of America and its global interests—to fly and fight in Air, Space, and Cyberspace.
3. *Exclusion Criteria*: any statement citing the Air Force Vision (discussed later), statements focused on the future operations as opposed to current time.
4. *Examples*:
 - a. “As members of a fighting Air Force, Airmen know their mission is to fly, fight and win no matter where their missions take them.”
 - b. “Nearly 17 years of continuous combat operations have put extreme stress on our people and equipment. It’s become exceedingly difficult, costly, and time-consuming to maintain worn-out aircraft and equipment.”
 - c. “As our Air Force continues to fight and win the Global War on Terror, modernize its air, space and cyberspace assets, and continue to develop and care for our Airmen, I urge all Airmen to move into the future with a clear purpose and focused resolve.”

Air Force Path to the Future

1. *Definition*: the Air Force vision for the future to compete in warfare and protect America.
2. *Inclusion Criteria*: any mention of how the Air Force can accomplish its mission, any mention of the phrase “heritage to horizon,” how the Air Force is changing operations and improving personnel, future acquisitions, Air Force Force-shaping, any mention of the Air Force vision, the core competencies, six distinctive capabilities, any mention of Air Force future plans and/or developments, future Air Force threats, or the words “air, space, and cyberspace.”
 - a. Air Force Vision: “To achieve that mission, the Air Force has a vision of **Global Vigilance, Reach and Power**. That vision orbits around three core competencies: **Developing Airmen, Technology to Warfighting and Integrating Options**. These Core competencies make our six distinctive capabilities possible. One, **Air and Space Superiority**: with it, joint forces can dominate enemy operations in all dimensions—land, sea, air, and space. Two, **Global Attack**: because of technological advances, the Air Force can attack anywhere, anytime—and do so quickly and with greater precision than ever before. Three, **Rapid Global Mobility**: being able to respond quickly and decisively anywhere we’re needed is key to maintaining the rapid global mobility. Four, **Precision Engagement**: The essence lies in the ability to apply selective force against specific targets because the nature and variety of future contingencies demand both precise and reliable use of military power with minimal risk and collateral damage. Five, **Information Superiority**: the ability of joint force commanders to keep pace with information and incorporate it into a campaign plan is crucial. Six, **Agile Combat Support**: deployment and sustainment are keys to successful operations and cannot be separated. Agile combat support applies to all forces, from those permanently based to contingency buildups to expeditionary forces.”

3. *Exclusion Criteria:* Air Force mission coding, context focusing on achieving a goal as opposed to plans for achieving future goals, current operations, Global War on Terror, Operation Noble Eagle.
4. *Examples:*
 - a. “We are at the beginning of the AFSO 21 [Air Force Smart Operations for the 21st Century] journey, but I am excited about the strides we are making. Already success stories are flowing from around our Air Force of even the youngest Airmen using AFSO 21 principles to make things better.”
 - b. “Your daily efforts provide our nation with Global Vigilance, Global Reach, and Global Power now.”
 - c. “Today, we have three major challenges facing our Air Force. First and foremost is accomplishing the combatant tasks the President and Secretary of Defense assign. Second, we must preserve that which makes us the most feared air force in the world—our people. Third, we face the difficult task of operating the oldest inventory in the history of the United States Air Force.”

Values and Behavior

Core Values

1. *Definition:* The core values of the U.S. Air Force: 1. Integrity First, 2. Excellence in All We Do, and 3. Service Before Self.
2. *Inclusion Criteria:* any mention of the words *core values*, *Integrity First*, *Integrity*, *Service Before Self*, *Service*, *Excellence in All We Do*, and *Excellence* in a values-context sentence.
3. *Exclusion Criteria:* mention of any of the previous words when not referring to the Air Force core values or value system.
4. *Examples:*
 - a. “Integrity, Service, and Excellence are the enduring touchstones of the United States Air Force, and discipline is at the core of all three.”
 - b. “Since its early days as the Army Air Corps, expeditionary Airmen have embodied the Air Force core values in their efforts to protect the nation, its interests and allies.”
 - c. “Leaders, whether in a supervisory role or through incidental contact, will positively affect other Airmen by displaying integrity, service before self and an excellence that motivates others to strive for the same attributes in their own career and family life.”

Behaviors Exhibiting Core Values

1. *Definition:* proper, acceptable, expected, positive behavior by Air Force personnel.
2. *Inclusion Criteria:* any mention of proper behavior by Air Force individuals, any mention of “standards of conduct,” etc., specifically when addressed as “I need Airmen to . . . ,” “Airmen should . . . ,” etc. Also code sentences that direct Airmen toward particular behavior.

3. *Exclusion Criteria:* any mention of how Air Force personnel should not act or mentions of general behaviors—only those expected and/or proper for Air Force personnel.
4. *Examples:*
 - a. “Every leader, no matter if you’re a staff sergeant, chief master sergeant or four-star general, needs to be able to talk about what is happening in the Air Force and understand the Air Force’s strategic vision and top priorities.”
 - b. “From the smallest tasks to the most complex, we need to take a hard look at what we do and why we do it.”
 - c. “I encourage each of you to seek out Web sites, news articles and senior leader viewpoints about AFSO 21 and explore what it can do for you. Find out how it can help you improve the way you do business.”

Violations of Core Values/Rules

1. *Definition:* behavior against Air Force regulations, harmful to oneself, disrespectful and general improper behavior.
2. *Inclusion Criteria:* any behavior harmful to an individual, against Air Force rules and regulations, described as what “not to do,” or regarded disdainfully.
3. *Exclusion Criteria:* positive examples of overcoming negative behavior.
4. *Examples:*
 - a. “Sometimes we are afraid to tell people when they are doing things wrong. Sometimes people think that following certain rules just isn’t as important as following others.”
 - b. “However, I realize there are also Airmen who are not living up to their health and fitness potential.”
 - c. “146 Airman were killed in mishaps during the last five 101 Critical Days of Summer periods. Of these fatalities, 117 were traffic related, and 43% of these deaths were motorcyclists. Just this past weekend, four Airmen were killed in four separate vehicle accidents, two while driving motorcycles.”

Individual Identity Today

Airman

1. *Definition:* the concept of being an “Airman” and related topics within the Air Force.
2. *Inclusion Criteria:* any mention of the word *Airman* or *Airmen*.
3. *Exclusion Criteria:* any concept relating to being an Airman without using the word Airman or Airmen.
4. *Examples:*
 - a. “Last summer, Gen John Jumper, Air Force chief of staff, made it clear all Airmen are ‘expeditionary’ and deployable.”
 - b. “Among these efforts, we are expanding basic military training to give Airmen skills to set up and defend expeditionary air bases, we recognize our Airmen’s ground combat actions with a new Air Force Combat Action Medal, and we now have an Airman’s Creed to embody and articulate our warrior spirit.”

- c. “We are busy, both our deploying Airmen and those Airmen left behind to carry on the home station mission.”

Warrior/Warfighter/Warrior Ethos

1. *Definition*: concepts related to being a warrior or warfighter and the warrior ethos within USAF.
2. *Inclusion Criteria*: any mention of the words *warrior*, *warfighter*, *ethos*, or *warrior ethos*.
3. *Exclusion Criteria*: any sentence without the inclusion criteria key words.
4. *Examples*:
 - a. “Our Airman’s Creed captures what our warrior ethos means, and everywhere I go I see Airman reciting the creed from heart.” Note: this sentence can also be coded under “Airman/Wingman/Creed.”
 - b. “Drinking alcohol in excessive amounts can also degrade a fit warrior force.” Note: this sentence may also be coded under Violation of Core Values/Rules.
 - c. “Since becoming Chief a year and a half ago, one of my top priorities has been to reinvigorate the warrior ethos in every Airman of our Total Force.”

Wingman Concept/Behaviors

1. *Definition*: the wingman concept and philosophy and related behaviors associated with being a USAF wingman.
2. *Inclusion Criteria*: any behaviors related to being a wingman or team player.
3. *Exclusion Criteria*: any mention of Service Before Self, looking out for a teammate, other behaviors associated with friendship, etc., without the word *wingman*.
4. *Examples*:
 - a. “It also calls for providing leadership they can trust unconditionally. The wingman concept—the bond we all share as Airmen—is at the core of this conviction.”
 - b. “In the battle against suicide, knowledge is one of our main weapons. Understanding the signs of stress and depression in yourself and others can empower you to know when to seek help and wingmen to know how to help each other.”

Recognizing the Role of Subgroups

1. *Definition*: recognizing subgroups within USAF and the context in which the subgroup is recognized.
2. *Inclusion Criteria*: any mention of Air Force personnel being part of a specific group both in terms of career field or demographic characteristic (pilots, medical doctors, special operations, women, racial groups, geographic origin), praise for a particular subgroup or for “you” the individual Airman, Air Force personnel mentioned in a role within joint forces, identity characteristics of Air Force personnel—any time the intent of the message or sentence is to outline *who* is part of the Air Force, Airmen as opposed to other people.
3. *Exclusion Criteria*: addressing Air Force personnel without providing recognition to particular subgroups or providing *identity* or *role* status within a larger group.

4. *Examples:*
 - a. “Spreading their wings over America following 9/11, Airmen of Operation Noble Eagle continue to protect our nation’s air corridors and maritime approaches.”
 - b. “Our Airmen—enlisted ranks, in particular—are the most highly educated in our Nation’s history.”
 - c. “From taking the fight to the enemy in Iraq; to rebuilding lives in the wake of hurricane Katrina; to controlling satellites on the other side of the world; to fighting forest fires in the Rockies; to patrolling the skies over America—you can be proud of the work your Air Force is doing to protect our country.”
 - d. “Nearly a year ago, Major Nicole Malachowski became the first female Thunderbird pilot and this year is joined by Major Samantha Weeks.”

Well-Being and Readiness

Individual Well-Being and Readiness

1. *Definition:* life issues, hardships, challenges, and support policies or mechanisms related to Air Force personnel besides war and daily duties.
2. *Inclusion Criteria:* any health (mental, spiritual, and physical) and physical fitness discussions, all education issues, finances, divorce, preparations for deployment, depression, stress—by-products of Air Force life that pertain to Air Force personnel.
3. *Exclusion Criteria:* issues related to hardships of warfare or difficulty in completing daily work.
4. *Examples:*
 - a. “And, ‘lately, stress has been taking its toll on our Airmen,’ . . . The result: a ‘sky-rocketing’ suicide rate and a more than one-third rise in accidents.”
 - b. “Be prepared. Have a plan to turn over financial matters, powers of attorney, and important documents like birth certificates to your designated guardian.”

Families

1. *Definition:* documenting any reference to Air Force families within any context.
2. *Inclusion Criteria:* any mention of the words *family*, *spouse*, *children*, *parents*, etc.
3. *Exclusion Criteria:* issues related to Air Force families without the inclusion criteria key words.
4. *Examples:*
 - a. “Sharing healthy lifestyle activities with family and friends can be great fun and extends the benefits to those within an Airman’s circle of influence.”
 - b. “I know Airmen and their families will find the rewards well worth the effort in both work and play.”
 - c. “Each and every family is critical to our mission success, so we are continuing to look for ways to ensure the highest quality of life standards for each of our bases’ military family housing and facilities.”

Interrater Reliability Statistics

Several quantitative tests provided an index for rater agreement for coding categorical data. These tests calculate a descriptive statistic that summarizes the degree of agreement between coders (two coders for our analysis) across a number of objects (i.e., senior leader messages).

The simplest form, a percentage agreement calculation, calculates the percentage of codes in which the coders agreed. However, this approach is clearly inadequate because a certain amount of agreement can be attributed to pure chance and percentages do not account for chance agreement.¹ For example, if Coder 1 and Coder 2 are coding on a yes-no basis whether a sentence has property X, chance would have the coders agreeing a certain portion of the time regardless of a systematic classification structure. As the number of coding categories decreases, the probability of agreement increases, indicating that the number of coding categories has a strong influence on the percentage-of-agreement statistics.² Thus, the percentage of agreement is not an ideal measure of intercoder agreement.

In 1960, as a solution to the chance-agreement problem, Jacob Cohen proposed the *kappa statistic* as a chance-corrected measure of intercoder reliability.³ The very popular statistic essentially assumes statistical independence between raters and discounts the observed agreement proportion with the expected level of agreement. The equation is

$$\kappa = \frac{p_a - p_c}{1 - p_c},$$

where p_a is the proportion of overall agreement and p_c is the proportion of agreements expected by chance.⁴ Note that the kappa coefficient measures agreement between two raters.⁵

Cohen's kappa statistic is one of the most popular intercoder reliability statistics used, but we found a more appropriate statistic for this analysis. Although accounting for the chance-agreement probability improves the kappa statistic as a measure of intercoder reliability, kappa's underlying assumptions limit its application for the senior leader message analysis. Basically,

¹ Mousumi Banerjee, Michelle Capozzoli, Laura McSweeney, and Debajyoti Sinha, "Beyond Kappa: A Review of Interrater Agreement Measures," *The Canadian Journal of Statistics*, Vol. 27, No. 1, 1999, pp. 3–23; Grayson and Rust, 2001; Kilem Gwet, *Statistical Tables for Inter-Rater Agreement*, Gaithersburg, Md.: StatAxis, 2001, p. vi.

² Perreault and Leigh, 1989.

³ Jacob Cohen, "A Coefficient of Agreement for Nominal Scales," *Educational and Psychological Measurement*, Vol. 20, No. 1, 1960, pp. 37–46.

⁴ See Grayson and Rust, 2001, p. 72, for an example of how to calculate both of these measures for the kappa coefficient.

⁵ Banerjee et al., 1999, p. 5.

Cohen's kappa statistic assumes that every coder's distribution of classification judgments is identical,⁶ but this is not necessarily consistent with reality. Likely, coders will find it difficult to classify data into exactly the same categories regardless of concise, clearly defined, and mutually exclusive coding categories. Although the codebook eliminates as much ambiguity as possible, coders will make judgments when classifying data and cannot be assumed to judge similarly when encountering the remaining ambiguity. For the senior leader message-content analysis, the independent judgment distribution assumption fits because both coders operated independently when coding and conferred only when refining the codebook.

Building on the inherent limitation of Cohen's kappa statistic, Perreault and Leigh developed a measure that did not depend on coder judgment distributions.⁷ Grayson and Rust have summarized Perreault and Leigh's description of that measure, the index of reliability. The summary begins with the following equation:

$$I_r = \sqrt{\left(p_a - \frac{1}{c}\right)\left(\frac{c}{c-1}\right)},$$

where c is the number of coding categories, and p_a is the proportion of overall agreement.⁸ This measure also allows calculation of an estimated standard error, which consequently allows the two statistics to form a confidence interval. The standard error equation is

$$s_I = \sqrt{\frac{I_r(1 - I_r)}{n}},$$

where n is the number of observations (the number of sentences for our approach).⁹ Interpretation of the resulting statistic is not confounded by chance agreement and is not sensitive to coder judgment distributions. Additionally, the statistic accounts for the number of coding categories and does not assume equal probability of coding data into each category. Hence, the measure is more a reflection of the reliability of the whole coding process and not simply a coder-agreement statistic.¹⁰ Because of these factors and because a priori coding patterns were unlikely to be constant, the index of reliability assumptions better fit the content analysis for the senior leader messages.

⁶ Robert L. Brennan and Dale J. Prediger, "Coefficient Kappa: Some Uses, Misuses, and Alternatives," *Educational and Psychological Measurement*, Vol. 41, 1981, pp. 687–699.

⁷ Perreault and Leigh, 1989.

⁸ Grayson and Rust, 2001, p. 73.

⁹ Grayson and Rust, 2001, p. 73.

¹⁰ Perreault and Leigh, 1989, p. 143.

Bibliography

Air Force Link—See Headquarters U.S. Air Force.

Air Force Personnel Center, Interactive Demographic Analysis System (IDEAS), Web site, September 2008. As of October 3, 2008:
http://w11.afpc.randolph.af.mil/vbin/broker8.exe?_program=ideas.IDEAS_default.sas&_service=prod2pool3&_debug=0

Albert, Stuart, and David Whetten, "Organizational Identity" in Larry Cummings and Barry Staw, eds., *Research in Organizational Behavior*, Vol. 7, Greenwich, Conn.: JAI Press, 1985.

Banerjee, Mousumi, Michelle Capozzoli, Laura McSweeney, and Debajyoti Sinha, "Beyond Kappa: A Review of Interrater Agreement Measures," *The Canadian Journal of Statistics*, Vol. 27, No. 1, 1999, pp. 3–23.

Barney, Jay B., J. Stuart Bunderson, Peter Foreman, Loren T. Gustafson, Anne S. Huff, Luis L. Martins, Rhonda K. Reger, Ylanda Sarason, and J. L. Stimpert, "A Strategy Conversation on the Topic of Organization Identity," in David A. Whetten and Paul C. Godfrey, eds., *Identity in Organizations: Building Theory Through Conversations*, Thousand Oaks, Calif.: Sage Publications, 1998, pp. 99–165.

Brennan, Robert L., and Dale J. Prediger, "Coefficient Kappa: Some Uses, Misuses, and Alternatives," *Educational and Psychological Measurement*, Vol. 41, 1981, pp. 687–699.

Builder, Carl H., *The Masks of War: American Military Styles in Strategy and Analysis*, Baltimore, Md.: Johns Hopkins University Press, 1989.

Carey, James W., Mark Morgan, and Margaret J. Oxtoby, "Intercoder Agreement in Analysis of Responses to Open-Ended Interview Questions: Examples from Tuberculosis Research," *Cultural Anthropology Methods*, Vol. 8, No. 3, 1996, pp. 1–5.

Cohen, Jacob, "A Coefficient of Agreement for Nominal Scales," *Educational and Psychological Measurement*, Vol. 20, No. 1, 1960, pp. 37–46.

Department of the Air Force, *United States Air Force Core Values ("Little Blue Book")*, Washington, D.C., 1997. As of June 28, 2009:
<http://www.usafa.af.mil/core-value/cv-mastr.html>

———, *United States Air Force Core Values ("Little Blue Book")*, revised, unpublished draft, Washington, D.C., 2005.

Gioia, Dennis A., Majken Schultz, and Kevin G. Corley, "Organizational Identity, Image, and Adaptive Instability," *The Academy of Management Review*, Vol. 25, No. 1, January 2000, pp. 63–81.

Grayson, Kent, and Roland Rust, "Interrater Reliability," *Journal of Consumer Psychology*, Vol. 10, Nos. 1–2, 2001, pp. 71–73.

Gwet, Kilem, *Statistical Tables for Inter-Rater Agreement*, Gaithersburg, Md.: StatAxis Consulting, 2001.

Headquarters U.S. Air Force, Official Web Site of the U.S. Air Force (aka *Air Force Link*), Welcome page, "Air Force Mission." As of July 17, 2008:
<http://www.af.mil/main/welcome.asp>

Hosek, James, Jennifer Kavanagh, and Laura Miller, *How Deployments Affect Service Members*, Santa Monica, Calif.: RAND Corporation, MG-432-RC, 2006. As of July 30, 2009:
<http://www.rand.org/pubs/monographs/MG432/>

Karney, Benjamin R., and John S. Crown, *Families Under Stress: An Assessment of Data, Theory, and Research on Marriage and Divorce in the Military*, Santa Monica, Calif.: RAND Corporation, MG-599-OSD, 2007. As of July 30, 2009:

<http://www.rand.org/pubs/monographs/MG599/>

Krippendorff, Klaus, *Content Analysis: An Introduction to Its Methodology*, 2nd ed., Thousand Oaks, Calif.: Sage Publications, 2004.

MacQueen, Kathleen M., Eleanor McLellan, Kelly Kay, and Bobby Milstein, "Codebook Development for Team-Based Qualitative Analysis," *Cultural Anthropology Methods*, Vol. 10, No. 2, 1998, pp. 31–36.

McKinley, CMSgt Rodney J., Chief Master Sergeant of the Air Force, "The Enlisted Perspective: Airman Pride," November 9, 2006.

———, "The Enlisted Perspective: Importance of Physical Fitness," May 2007a.

———, "The Enlisted Perspective: Developing and Caring for Airmen," July 2007b.

Miles, M. B., and A. M. Huberman, *Qualitative Data Analysis*, 2nd ed., Thousand Oaks, Calif.: Sage Publications, 1994.

Moseley, Gen T. Michael, Chief of Staff of the Air Force, "CSAF's Vector: Advanced Composite Force Training," January 5, 2006.

———, "CSAF's Vector: Discipline," September 2007.

Moseley, Gen T. Michael, Chief of Staff of the Air Force, and Michael W. Wynne, Secretary of the Air Force, "Letter to Airmen: Diversity and the United States Air Force," July 31, 2006.

Perrault, Jr., William D., and Laurence E. Leigh, "Reliability of Nominal Data Based on Qualitative Judgments," *Journal of Marketing Research*, Vol. 26, May 1989, pp. 135–148.

Petitt, Karen, "Air Force Launches 'E-Mail for Life' Initiative," *Air Force Link*, March 3, 2007. As of June 5, 2007:

<http://www.af.mil/news/story.asp?id=123046048>

Poindexter, Paula M., and Maxwell E. McCombs, *Research in Mass Communication*, New York: Bedford/St. Martin, 1999.

Ryan, Gery, and H. Russell Bernard, "Techniques to Identify Themes," *Field Methods*, Vol. 15, No. 1, February 2003, p. 87.

Schein, Edgar H., *Organizational Culture and Leadership*, 3rd ed., San Francisco: John Wiley & Sons, Inc., 2004.

Smith, Lt Col James M., "Air Force Culture and Cohesion: Building an Air and Space Force for the Twenty-First Century," *Airpower Journal*, Vol. 12, No. 3, Fall 1998, pp. 40–53.

Wynne, Michael W., Secretary of the Air Force, "Letter to Airmen: Education and the Airman," April 2006.